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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,089	01/17/2002	Toshio Inase	218233US2	5580
22850	7590	11/20/2003	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			ANGEBRANDT, MARTIN J	
			ART UNIT	PAPER NUMBER
			1756	

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/047,089	INASE ET AL.	
	Examiner	Art Unit	
	Martin J Angebranndt	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,2,4-6,8-10,12-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 07-161072 (machine translation attached)

JP 07-161072 teaches protective layers which are the combination of AlN, Bn, SiC and C together from at least one of silica, alumina and tantala. (abstract and [0005] and [0016]). The reference exemplifies an AlN-SiO₂ dielectric layer. [0024]. Other carbides including TiC, Wc and ZrC are disclosed as are other oxides including titania, indium oxide, , zirconium oxide and tin oxide [0015]. The relative amounts of the two components are disclosed as 1:9 to 9:1 [0018]. The use of other recording layers in the art is disclosed [0002].

It would have been obvious to one skilled in the art to modify the invention of the examples by choosing other combinations, such as aluminum and/or tantalum oxides combined with 1-40% silicon carbide based upon the disclosure of equivalence in sections [0005 and 0016] of the reference. Further, it would have been obvious to one skilled in the art to add other oxides, to the resulting combination, such as silica based upon the language embracing the addition of two or more in section [0016] and the abstract with a reasonable expectation of achieving comparable results.

3. Claims 5-6,8,13-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi et al. '232

Nakanishi et al. '232 exemplifies in example 14, a phase change optical recording medium which uses a mixture of $\text{TiC}:\text{SiO}_2$ (4:6) for one of the protective layers. Example 12 uses a mixture of $\text{ZrC}:\text{SiO}_2$ (3:7) for one of the protective layers. The use of oxides of Al and the use of silicon carbides is disclosed. (7/29-55)

It would have been obvious to one skilled in the art to modify the invention of the examples by choosing other combinations, such as aluminum based upon the disclosure of equivalence in column 7 of the reference. Further, it would have been obvious to one skilled in the art to use SiC in place of the carbides in the resulting combination based upon the language of equivalence with a reasonable expectation of achieving comparable results.

4. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nonaka et al. '753, in view of Ohbayashi et al. '039

Nonaka et al. '753 discloses using Al_2O_3 as the boundary layer in contact with the GeTeSb recording layer (example 43). The use of SiC is disclosed in example 36. The disclosure of useful materials for the boundary layer, including oxides, carbides and nitrides of Al, Si, Ti, Cr, Ge, and Zr (6/1+).

Ohbayashi et al. '039 teaches optical recording media comprising oxides of Si, Ge, Ti, Ta, Al and Zr, Carbides of Ti, Zr, Hf and Si. The addition of carbides is disclosed as particularly desirable due to the lower stress in the resulting film (which prevents cracking).

It would have been obvious to one skilled in the art to modify the invention of the examples by adding 1-40% carbide based upon the disclosure of to use combination and the teachings within Ohbayashi et al. '039 concerning the reduction of stress in the film. Further, it would have been obvious to one skilled in the art to add other oxides or to use other oxides, such

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as tantala, hafnia or silica based upon the language embracing the addition of two or more in Nonaka et al. '753 and Ohbayashi et al. '039.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

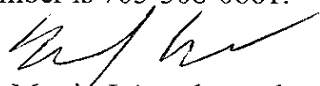
JP 2002-208182 discloses similar subject matter, but is not prior art.

Iwasaki EP 731460 is cumulative.

6 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebranndt whose telephone number is 703-308-4397. The examiner can normally be reached on Mondays-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Martin J Angebranndt
Primary Examiner
Art Unit 1756

November 16, 2003